

Second Amendment to Agreement to Provide Professional Engineering Services to Develop a Master Plan for the Eno Economic Development District Water and Sewer System Project between the City of Durham and CDM Smith Inc.

(Contract No. 10416)

This second amendment ("Amendment No. 2") is dated and entered into as of the _____ day of _____, 2016, between CDM Smith Inc. a corporation authorized to do business in the State of North Carolina, (hereinafter referred to as the "Engineer") and City of Durham (hereinafter referred to as the "City").

The City and the Engineer entered into a contract titled "Agreement to Provide Professional Engineering Services to Develop a Master Plan for the Eno Economic Development District Water and Sewer Project between the City of Durham and CDM Smith Inc." dated February 1, 2013. That contract is referred to as the "Original Contract." The Original Contract provided for master planning services and potential additional services for a total potential contract amount of \$110,000. In an instrument title "Amendment to Agreement to Provide Engineering Services to Develop a Master Plan for the Eno Economic Development Water and Sewer System Project between the City of Durham and CDM Smith Inc." dated December 15, 2014, the Original Contract was amended to include additional services for a revised total amount of \$124,200. That amendment is referred to as "Amendment No. 1." The Original Contract together with all amendments shall be referred to as the "Contract." The Contract is hereby amended as follows:

1. Add Attachment A-3, titled "Final Design and Construction Services", attached hereto. To the extent that a conflict may exist between the terms of Exhibits A through J of the Original Contract, Attachment A-3 shall be controlling.
2. In Attachment A-1 of the Original Contract, replace Table 1 in Section 2 in its entirety and replace with the following:

2. Payment for Services

A Lump Sum amount of \$110,000 was included in the original Agreement. Amendment #1 included \$14,200 for additional services. This Amendment #2 includes \$353,300 for additional services. The total for the original Agreement, Amendment #1, and Amendment #2 is \$477,500. The lump sum total for Amendment #2 is \$238,900, the cost not-to-exceed total is \$114,400, for a total cost for Amendment #2 of \$353,300. For lump sum tasks, partial payments shall be made by the City on a monthly basis in proportion to the percentage of work completed during that month and the balance of payment made when Basic Services are completed. For cost not-to-exceed tasks, payment will be made based on the actual hours and expenses incurred by the Engineer in accordance with the hourly rates identified below. The following is a distribution of compensation by task:

Task	Description	Task Budget
1.1	Kickoff Meeting and Data Collection	\$5,300
1.2	Flow Projections	\$13,000
1.3	Proposed Water and Wastewater Infrastructure w/in Eno EDD	\$17,700
1.4	Force Main Discharge Alternatives	\$32,900
1.5	Permit Agency Coordination	\$8,300
1.6	Cost Estimates	\$8,400
1.7	Workshop and Master Plan Report	\$24,400
<i>Total for Original Agreement =</i>		<i>\$110,000</i>
1.8	Additional Gravity Sewer Analysis	\$14,200
<i>Total for Amendment #1 =</i>		<i>\$14,200</i>
1.9	Project Initiation and Public Involvement	\$7,900
1.10	Data Collection	\$86,600
1.11	Final Design	\$79,600
1.12	Permitting	\$48,600
1.13	Bidding	\$16,200
1.14	Construction Administration*	\$61,400
1.15	Construction Observation*	\$53,000
<i>Total for Amendment #2 =</i>		<i>\$353,300</i>
TOTAL =		\$477,500

* Services will be billed on a cost not-to-exceed basis

Standard Hourly Rate Schedule

Officer-in-Charge	\$198
Technical Reviewer	\$210
Project Manager	\$178
Senior Engineer	\$190
Project Engineer IV	\$175
Project Engineer III	\$165
Project Engineer II	\$127
Project Engineer I	\$95

3. State Law Provisions

(a) E-Verify Requirements. (A) If this contract is awarded pursuant to North Carolina General Statutes (NCGS) 143-129 – (i) the contractor represents and covenants that the contractor and its subcontractors comply with the requirements of Article 2 of Chapter 64 of the NCGS; (ii) the words "contractor," "contractor's subcontractors," and "comply" as used in this subsection (A) shall have the meanings intended by NCGS 143-129(j); and (iii) the City is relying on this subsection (A) in entering into this contract. (B) If this contract is subject to NCGS 143-133.3, the contractor and its subcontractors shall comply with the requirements of Article 2 of Chapter 64 of the NCGS.

(b) Iran Divestment Act Certification. The Contractor certifies that, if it submitted a successful bid for this contract, then as of the date it submitted the bid, the Contractor was not identified on the Iran List. If it did not submit a bid for this contract, the Contractor certifies that as of the date that this contract is entered into, the Contractor is not identified on the Iran List. It is a material breach of contract for the Contractor to be identified on the Iran List during the term of this contract or to utilize on this contract any subcontractor that is identified on the Iran List. In this Iran Divestment Act Certification section -- "Contractor" means the person entering into this contract with the City of Durham; and "Iran List" means the Final Divestment List – Iran, the Parent and Subsidiary Guidance– Iran list, and all other lists issued from time to time by the N.C. State Treasurer to comply with G. S. 147-86.58 of the N.C. Iran Divestment Act.

IN WITNESS WHEREOF, the parties hereto have executed this AMENDMENT, the Effective Date of which is indicated on page 1.

OWNER – CITY OF DURHAM

ATTEST:

City Clerk

By: _____

City Manager

City's Finance Officer

Date

ENGINEER:

CDM Smith Inc.

Secretary

By: _____

Vice President

Corporate Seal – Engineer

Date Signed: _____

State of North Carolina

ACKNOWLEDGMENT BY CORPORATION

County of Wake

I, a notary public in and for the aforesaid county and state, certify that _____ personally appeared before me this day and stated that he is Secretary of _____, a corporation, and that by authority duly given and as the act of the corporation, the foregoing Amendment Number 2 with the City of Durham was signed in its name by its Vice President whose name is _____, sealed with its corporate seal, and attested by himself as its said Secretary. This the _____ day of _____, 2016.

My commission expires:

Notary Public

Attachment A-3
Project No. 10416
Final Design and Construction Services

Introduction

The master planning analysis has been completed and development of a draft Master Plan Report provided. This scope authorization includes performing design, permitting, bidding, and construction administration services for the improvements recommended in the Master Plan Report.

PROJECT OBJECTIVES AND DESCRIPTION

This AMENDMENT includes design, permitting, bidding, and construction administration services for approximately 8,100 feet of 8-inch diameter gravity sanitary sewer in the Eno Economic Development District of Orange County. It is assumed that the pipe will be installed via open-cut, with the exception of a trenchless crossing of US-70 via jack-and-bore.

Task 1.9 – Project Initiation and Public Involvement

Engineer will facilitate a kickoff meeting with City and Orange County (County) staff to discuss and define overall objectives and goals of the project, communication protocols, and project scope and schedule. ENGINEER shall develop meeting minutes and distribute to all meeting attendees. The minutes shall be referred to throughout the project to verify the key project components are being met.

Engineer will attend one public meeting during the project, schedule to be determined at a later date. The public meeting will focus on informing the public about the project and addressing questions or concerns. The Engineer will provide a sign-in sheet to obtain contact information from attendees at the meeting, prepare maps and handouts as needed to convey information about the project, and prepare a PowerPoint presentation about the project to update attendees about the status of the project.

Task 1.10 – Data Collection

Survey and Utility Location

CDM Smith and its survey sub-consultant will perform topographic and planimetric surveying services to provide accurate information as to the horizontal and vertical locations of all existing structures, land features, property identification, etc. Level-B Subsurface Utility Exploration (SUE) shall be completed to identify underground utilities within the project area. Up to four (4) Level A SUE test holes are included in the project to identify accurate horizontal and vertical locations of underground utilities that may be in conflict with the proposed infrastructure. All surveying shall be in accordance with current North Carolina surveying standards and conducted using conventional, GPS, or other accepted methods. Local benchmark(s) as established by the

National Geodetic Survey shall be used to establish horizontal and vertical control within the project limits.

Geotechnical Investigations

Engineer and its geotechnical drilling sub-consultant will perform a geotechnical investigation along the proposed alignment to observe subsurface conditions and support the design of the new gravity sewer. Engineer assumes the entire alignment will be constructed by open-cut, with the exception of the US-70 road crossing. All borings are assumed to be performed in unpaved areas. The scope of the subsurface investigation will consist of the following:

- Perform Standard Penetration Test (SPT) borings at approximately 500-foot-intervals along the alignment. Up to 16 borings will be drilled. In general, drill depths will extend to 2 feet below the proposed pipe invert.
- Observe and log soil and groundwater conditions in all borings. SPT split-spoon sampling will be performed in general accordance with ASTM D1586 and soil samples will be given a USCS classification. Where refusal is encountered above the planned depth of boring, rock coring will be performed to at least a depth of 2 feet below the proposed pipe invert. For trenchless borings (US-70), rock coring will be performed to extend borings to the shaft bottom.
- Borings where the pipe is proposed to be installed via open-cut will be backfilled with cuttings. Borings at the proposed trenchless crossing will be backfilled with grout.
- Conduct laboratory testing on selected soil samples to confirm soil classification, estimate engineering properties, and determine suitability for re-use as backfill materials.

Upon completion of the geotechnical investigation, Engineer will prepare a geotechnical data report summarizing the subsurface conditions observed in the borings and containing all data (boring logs, laboratory testing, etc.) collected during the investigation. Horizontal location of the test hole shall be located using GPS services.

Easement Documentation

Engineer and its survey sub-consultant will develop up to 11 easement documents for installation of the proposed gravity sewer. The easement will be wide enough to accommodate a future waterline. The easement documents will include a legal description and sketch of the easement. A traditional easement plat will not be developed. The County will coordinate all negotiations with property owners and record the easements.

Task 1.11 – Final Design

Engineer will provide design documents for City and County review at the 50% and 90% milestones. Conceptual opinions of probable construction cost will be developed at the 50%, 90%, and bid set milestones. The last cost opinion will include a breakdown of costs by trade to assist the City with MWBE participation opportunities. It is assumed there will be 9 plan and profile drawings at a 40:1 scale. The trenchless crossing under US-70 will be included as a Bid Alternate in the final bid set.

A list of specifications will be provided at the 50% milestone. A complete set of specifications will be provided at all subsequent milestones. Engineer will meet with City and County staff to discuss review comments at the 50% and 90% milestones. A final bid set will be issued after all permits have been acquired.

Task 1.12 – Permitting

Engineer shall obtain the followings permits:

- City of Durham – Construction Drawing Approval
- City of Durham – Sewer Extension Permit
- 401 Water Quality Certification, NCDENR DWR
- 404 Nationwide Permit 12, USACE
- County Site Plan Review
- NCDOT – Encroachment Agreement
- NCDEQ – Erosion and Sediment Control Plan/NPDES Stormwater Permit

Engineer shall produce the necessary number of plans and specifications for submittal and meet with the regulatory agencies to discuss review comments (if any), and resubmit permits for final approval (if needed). As part of the 401/404 permit, stream and wetland field delineations will be performed. Engineer will meet with USACE to review, modify as needed, and finalize delineations.

Permit Fee Allowance

An allowance of \$3,500 has been included for permit fees in this Scope of Work. The Engineer shall pay the fees for the permits identified above and be reimbursed by the City.

Task 1.13 – Bidding

Under this task, CDM Smith will distribute bid packages to prospective bidders, facilitate a pre-bid meeting, issue addenda as needed, attend the bid opening, prepare a bid tabulation and recommendation to award, and assist in assembling and awarding a construction contract.

Task 1.14 – Construction Administration

The Engineer shall provide contract administration services during construction of the project, which is anticipated to have a six (6) month duration from Notice to Proceed to final closeout. Services will be billed based on actual costs incurred. If the upper limit is reached, Engineer shall provide an Amendment for additional funds.

Engineer shall consult with and advise the City and act as the City's representative as set forth herein. The City's instructions to the Contractor(s) shall be issued through the Engineer, who shall have the authority to act on behalf of the City in dealings with Contractor to the extent provided in this Agreement.

Project Meetings

The Engineer shall participate in a pre-construction meeting with the City and contractor to kick-off the project. An agenda will be developed for the meeting and minutes compiled and distributed to all meeting participants.

The Engineer shall meet with the City and contractor representatives and other key project team members on a monthly basis to discuss project progress and all significant issues. There are five (5) monthly meetings anticipated.

Project Coordination/Management

The Engineer shall coordinate work efforts between all key project team members including the City, County, subconsultants and other local entities having input into this project (i.e NCDEQ, USACE, NCDOT, etc.). The Engineer shall also provide day-to-day project management and adherence to project schedule and budget.

The Contract Documents contain a provision requiring the Contractor to reimburse the City for all costs associated with certain actions or lack of actions on the part of the Contractor that necessitate additional effort on the part of the Engineer and, hence, the City's costs for engineering above and beyond the costs for routine engineering services. The Contractor shall pay to the City the reasonable costs of such additional engineering effort at the hourly rate established in the Supplemental Conditions.

Shop Drawings

The Engineer shall review and approve or take other appropriate action with respect to Shop Drawings, samples, and other data which Contractor is required to submit, but only for conformance with the design concept of the completed project as a functioning whole as indicated in the Contract Documents and in compliance with the information given in the Contract Documents. Such reviews or other action shall not include means, methods, techniques, sequences, or procedures of construction or safety programs and precautions incident thereto. All submittals shall be reviewed by the Engineer within the time frame stipulated in the construction contract.

Clarifications and Interpretations: Field Orders

The Engineer shall issue necessary clarifications and interpretations of the Contract Documents as appropriate to the orderly completion of the Work. Such clarifications and interpretations will be consistent with the intent of and reasonably inferable from the Contract Documents. The Engineer may issue Field Orders authorizing minor variations from the requirements of the Contract Documents upon written approval by the City. Field Orders shall not involve change in Contract Price or Time.

Change Orders and Work Change Directives

The Engineer shall recommend Change Orders and Work Change Directives to the City as appropriate, and shall prepare Change Orders and Work Change Directives as required. The Engineer shall not issue such Change Orders and Work Change Directives until the City has approved and accepted Contractor's cost and schedule change to implement such Change Orders and Work Change Directives.

Inspections and Tests

The Engineer and its sub-consultant shall make recommendations to the City regarding the advisability of requiring special inspections or testing of the Work and have authority to receive and review all certificates of inspections, tests, and approvals required by laws, rules, regulations, ordinances, codes, orders, or the Contract Documents to determine generally that their content complies with the requirements of, and the results certified indicate compliance with, the Contract Documents. An Allowance of \$4,000 has been included in this Amendment.

Applications for Payment

The Engineer shall determine the amount owed to the Contractor based on the Engineer's observations and inspections at the site and the data comprising the Application for Payment, and the accompanying data and schedules, and recommend in writing payments to Contractor in such amounts. Such recommendations of payment will constitute a representation to the City that the Work has progressed to the point indicated and that, to the best of the Engineer's knowledge, information, and belief, the quality of the Work is in accordance with the Contract Documents.

Contractor's Completion Documents

The Engineer shall receive, review, and transmit to the City with written comments maintenance and operating instructions, schedules, guarantees, certificates of insurance, marked-up record drawings (including shop drawings, samples and other pertinent data), bonds, certificates of inspection, and tests and approvals of equipment which are to be provided by Contractor in accordance with the Contract Documents. The Engineer shall determine that their content complies with the requirements of the Contract Documents.

Substantial Completion

Following notice from Contractor that they consider the entire work ready for its intended use, the Engineer and City, accompanied by Contractor, shall conduct an inspection to determine if the work is substantially complete. If after considering any objections by the City, the Engineer considers the Work substantially complete, then the Engineer shall deliver a notice of substantial completion to the City and Contractor.

Final Notice of Acceptability of Work

Prior to final payment to the Contractor, and in company with the City, the Engineer shall visit the project to observe any apparent defects in the completed work, assist the City in consultations and discussions with Contractor concerning correction of such defects, and make recommendations as to replacement or correction of defective work.

The Engineer shall conduct a final inspection to determine if the completed Work is acceptable to the Engineer and City so that the Engineer may recommend, in writing, final payment to Contractor and may give written notice to the City and Contractor that the Work is acceptable, subject to any conditions therein expressed.

Task 1.15 – Construction Observation

Full time construction observation will not be performed, per the City's request. The Engineer will provide part time construction observation services necessary to certify record drawings,

address contractor questions promptly, and check compliance with the Contract documents. An allowance of up to \$53,000 has been included for this task. Services will be billed based on actual costs incurred. If the upper limit is reached, Engineer shall provide an Amendment for additional funds.

Engineer Visits to Site

An allowance of \$20,000 has been included for the Engineer visits to the site. The allowance is based on an average of 4 hours per week for 22 weeks. Engineer will make visits to the site at intervals appropriate to the stage of construction to observe as an experienced and qualified design professional the progress and quality of the Work and to determine if the Work is proceeding in accordance with the Contract Documents. On the basis of on-site inspections, Engineer shall keep the City informed of the progress and quality of the Work and shall alert the City to defects and deficiencies in the Work of the Contractor. The Engineer shall not have control or charge of and shall not be responsible for construction means, methods, techniques, sequences, or procedures of construction selected by Contractor or for safety and environmental programs and precautions incidental to the Work.

Resident Project Representative

An allowance of \$33,000 has been included for a Resident Project Representative (RPR). The allowance is based on an average 20 hours per week for 22 weeks. The RPR shall assist the Engineer in inspecting the progress and quality of the work of the Contractor. Project representation is intended to be at a sufficient level to monitor the contractor's work.

Through more extensive on-site inspections of the work in progress and field checks of materials and equipment by the RPR and assistants, RPR shall use reasonable effort to provide further protection for the City against defects and deficiencies in the work of Contractor. However, the RPR shall not, during such visits or as a result of such inspections of Contractor's work in progress, supervise, direct, or have control over Contractor's work, nor shall RPR have authority over or responsibility for the means, methods, techniques, sequences, or procedures selected by Contractor, for safety procedures and programs incident to the work of Contractor, for any failure of Contractor to comply with laws, rules, regulations, ordinances, codes, or orders applicable to Contractor's performing and furnishing the work, or responsibility of construction for Contractor's failure to furnish and perform the Work in accordance with the Contract Documents.

2. OWNER'S RESPONSIBILITIES

Furnish to Engineer, as requested by Engineer for performance of Services as required by the Contract Documents, the following:

- Distribute all public notification documents (e.g. door hangers, 30-day notification letters, etc.) in advance of field services, public meetings, etc.
- Perform all easement negotiations
- Submit and pay for easement recordation
- Provide access to the project area.

- Provide review comments on deliverables in a timely manner.
- Respond to questions and requests for information in a timely manner.

3. ASSUMPTIONS

The following assumptions were made during development of this Scope of Work. Changes to these assumptions can be included as an Amendment to this Agreement.

- The design and permitting schedule is 12 months from Notice to Proceed (NTP) to issuance of bid documents.
- The bid (2 months) and construction (6 months) schedule is 8 months from advertisement to final completion closeout.
- This scope of work assumes shop drawings will be reviewed no more than twice by the Engineer. Subsequent submittal reviews will be at the Contractors expense.
- Contractor shall provide surveyed red-lines in digital format to the Engineer for development of record drawings.
- New gravity sanitary sewer will be ductile iron.
- Additional gravity sanitary sewer and water lines can be included as an amendment to this Scope of Work.
- Only the permits identified in Task 7 will be obtained.
- Up to \$3,500 has been included for permit fees.
- Cross-sections will not be required for the City of Durham – Construction Permit, or any other permit.
- No temporary or permanent easements, beyond what is included in this Scope of Work, will be required.
- The US-70 crossing will be performed via jack-and-bore and included as a bid alternate in the construction contract.
- A single bid package will be utilized.

4. TIME PERIOD FOR PERFORMANCE

The time periods for the performance of Engineering Team services as set forth in Section 3 of the Original Agreement are amended and supplemented as follows:

<u>Project Component</u>	<u>Duration</u>
Task 1.9 – Project Initiation and Public Involvement.....	To Be Determined
Task 1.10 – Data Collection.....	2 months from Task 1.9
Task 1.11 – Final Design.....	6 months from Task 1.10

Task 1.12 – Permitting.....	4 months from Task 1.11
Task 1.13 – Bidding.....	2 months from Advertisement
Task 1.14 – Construction Administration.....	6 months from Construction NTP
Task 1.15 – Construction Observation.....	6 months from Construction NTP